

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TSUNEO SUGIURA

Appeal No. 1999-0893
Application No. 08/683,236

HEARD: May 9, 2001

Before THOMAS, RUGGIERO, and BARRY, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claim 1, which is the only claim remaining in the application. Claims 2 and 3 have been canceled.

The claimed invention relates to a hybrid-type stepping motor including a bearing mounted on a fixed shaft. First and second inner and outer stator yokes having a plurality of

stator yoke teeth are mounted side by side in the direction of the fixed shaft with each of the first and second inner and outer stator yokes having a magnet set between them. A barrel shaped rotor is rotatably supported on the bearing and a plurality of rotor teeth of the same shape and pitch are provided on the outer and inner circumference of the rotor.

Claim 1 is reproduced as follows:

1. A hybrid-type stepping motor comprising a bearing mounted on a fixed shaft, a barrel rotor rotatably supported by the bearing, a plurality of rotor teeth provided on the outer circumference and inner circumference of the barrel rotor, first and second inner stator yokes arranged side by side in the direction of the fixed shaft with a magnet set therebetween and first and second outer stator yokes arranged side by side in the direction of the fixed shaft with the magnet set therebetween, a plurality of stator yoke teeth, first through fourth axially centered circular coils slots facing the barrel rotor and formed around the outer circumference of the first and second inner stator yokes and the inner circumference of the first and second outer stator yokes, and first through fourth coils wound in a solenoid fashion and seated in the respective coil slots, whereby the stator yokes alternate in polarity and the barrel rotor is interposed between the coils;

wherein said magnet set comprises a first magnet interposed between the fixed shaft and the inner stator yokes and a second magnet interposed between the outer stator yokes and the outer wall of the fixed shaft, whereby the magnets face towards each other via the barrel rotor; and

wherein the plurality of rotor teeth provided on the outer and inner circumference of the barrel rotor are of the

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same shape and pitch, such that the barrel rotor moves only in the rotary direction.

The Examiner relies on the following prior art:

Nihei et al. (Nihei)	4,857,786	Aug. 15, 1989
Albrecht et al. (Albrecht)	4,920,292	Apr. 24, 1990

Claim 1 stands finally rejected under 35 U.S.C. § 103 as being unpatentable over Albrecht in view of Nihei.

Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Briefs¹ and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of obviousness relied upon by the Examiner as support for the

¹ The Appeal Brief was filed November 3, 1998. In response to the Examiner's Answer dated January 14, 1999, a Reply Brief was filed March 12, 1999 which was acknowledged and entered by the Examiner as indicated in the communication of May 21, 1999.

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rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in claim 1. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one

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having ordinary skill in the pertinent art would have been led to

modify the prior art or to combine prior art references to arrive

at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole

or knowledge generally available to one having ordinary skill in

the art. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825

(1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.,

776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed.

Cir. 1984). These showings by the Examiner are an essential part

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of complying with the burden of presenting a prima facie case
of

obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24
USPQ2d

1443, 1444 (Fed. Cir. 1992).

In response to the Examiner's 35 U.S.C. § 103 rejection
of claim 1, Appellant asserts the failure of the Examiner to
establish a prima facie case of obviousness since proper
motivation for the proposed combination of references has not
been established. In particular, Appellant contends (Brief,
pages 7-8; Reply brief, pages 2-4) that neither of the
Albrecht and Nihei references has any teaching or suggestion
to provide a barrel rotor having a plurality of rotor teeth of
the same shape and pitch provided on the inner and outer
circumference of the rotor as claimed.

After careful review of the applied Albrecht and Nihei
references in light of the arguments of record, we are in
agreement with Appellant's position as stated in the Briefs.
The mere fact that the prior art may be modified in the manner
suggested by the Examiner does not make the modification
obvious unless the prior art suggested the desirability of the

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modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992).

The Albrecht reference discloses a motor in which rotational and linear motion is provided in a single motor structure by having a rotor annularly configured between inner and outer stator elements. Nihei, on the other hand, discloses separate stator and rotor structures (e.g. Figures 1 and 6) for effecting linear and rotary movement. In our view, these structural teachings are so opposite in approach that any motivation to combine them must have resulted from an improper attempt to reconstruct Appellant's invention in hindsight. We find further deficiency in Nihei in providing any suggestion for the Examiner's proposed combination since the only embodiment that provides for teeth on both sides of a movable element is in the linear motor embodiment, not in the rotary motor embodiment where teeth are only provided on the outer circumference of the rotor.

We further agree with Appellant (Reply Brief, page 4) that the Examiner's proposed combination fails to establish a prima facie case of obviousness since such proposed combination would destroy the principle of operation of the

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Albrecht reference. The motor structure disclosed in Albrecht (e.g. Figure 8) has a rotor with teeth on the outer and inner circumference which are necessarily of differing shape and pitch since they are used to effect differing motor movement, i.e. linear or rotary, when acting in conjunction with the inner and outer stators. In our view, any attempt to modify the rotor structure of Albrecht to provide teeth of the same shape and pitch on the inner and outer rotor circumference must fail the test of obviousness since the benefits of the Albrecht structure would thereby be negated requiring a substantial redesign of the motor structure.

In conclusion, we are left to speculate why one of ordinary skill would have found it obvious to modify the applied prior art to make the combination suggested by the Examiner. The only reason we can discern is improper hindsight reconstruction of Appellants' claimed invention. In order for us to sustain the Examiner's rejection under 35 U.S.C. § 103, we would need to resort to speculation or unfounded assumptions or rationales to supply deficiencies in the factual basis of the rejection before us. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert.

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denied, 389 U.S. 1057 (1968), rehearing denied, 390 U.S. 1000 (1968).²

Accordingly, since we are of the opinion that the prior art applied by the Examiner does not support the obviousness rejection, we do not sustain the rejection of appealed claim 1. Therefore, the decision of the Examiner rejecting claim 1 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
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² At the oral hearing on May 9, 2001, Appellant's representative was informed of our consideration of the references to Welburn (U.S. Patent No. 4,501,980) and Akira (Abstract of Japanese Patent Publication JP 02237456), both of record in the application file. Each of these references, along with Appellant's admitted prior art illustration in Figure 2 of the drawings, describes rotor teeth of the same shape and pitch provided on the inner and outer circumferences of a rotor. While each of these disclosures provides a better teaching of the claimed rotor teeth structure than the Nihei reference applied by the Examiner, it is our view that an attempt to combine any of these references with Albrecht would fail for all of the reasons discussed supra.

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JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
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LANCE LEONARD BARRY)	
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DECISION: REVERSED

Send Reference(s): Yes No
or Translation (s)

Panel Change: Yes No

Index Sheet-2901 Rejection(s):

Prepared: January 18, 2002

Draft Final

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PALM / ACTS 2 / BOOK

DISK (FOIA) / REPORT